

High North Dialogue

The blue future of the Arctic 25th -26th May
2016, Bodø, Norway

Coordinating author:
Elena Dybtsyna

Nord university
Conference report
ISBN 978-82-7456-759-7
Bodø 2016

High North Dialogue

The blue future of the Arctic

25th-26th May 2016, Bodø, Norway



Copyright: Nord University

ISBN: 978-82-7456-759-7

Layout and print: Trykkeriet, Nord universitet

www.nord.no

www.highnorthcenter.com // www.highnorthdialogue.no // www.highnorthnews.com

Innhold

Preface	1
Day 1	2
Session 1: The Blue Future and the Arctic: Political Perspectives	2
Session 2: Politics and Economy of the Arctic	4
Session 3: Blue Potential	7
Session 4: Arctic Innovation	10
Day 2	12
Session 5: Presentations from Nord University	12
Scenario workshop in connection with Master course	12
Business Index North	13
Session 6: The Arctic and the Blue Dimension	15
“High North Hero”	17
Session 7: Future Arctic Leaders – Talking Barents	19
Discussion panel	21
The Petroleum Industry – Perspectives and Opportunities for Northern Norway	22
Lesson Learned: Future Perspectives on the Blue Potential	24

Preface

Worldwide interest in the Arctic is growing. Changing ice conditions, an increase in regional development, and international geopolitics have placed the High North at the center of attention. Since 2007, the *High North Dialogue Conference* series has brought together major interested parties – present and future – concerned with Arctic development, including politicians and heads of administration from central governments in all Arctic States, major extractive industry leaders, and representatives from fishing communities, academia, local communities, indigenous people, local politicians, other important stakeholders and master and Ph.D. students. As suggested by its name, the focus of the *High North Dialogue* is on the aspect of dialogue. This dialogue takes place between young people, future leaders, and representatives from the Arctic region's industry—ranging from maritime to land-based industry—authorities, and academics, in order to share information and discuss the best practices, with the aim of tackling challenges in the region.

In 2016, the twelfth *High North Dialogue Conference* has as its main topic “The Blue Future of the Arctic”. For more information on the history of former conferences, please visit www.highnorthdialogue.com.

One of the main target groups of the conference is Master- and Ph.D. students, from all around the world, interested in Arctic issues. Students came from the Nordic countries, North America, Asia, Russia, Ukraine and Europe at large; Master- and Ph.D. courses with scenario workshop were organized before and after the conference. This conference provided a unique opportunity for those students, who come from the North but do not deal with Arctic topics on a daily basis, to learn more about Arctic issues, and for those more familiar with Arctic issues to interact with fellow Arctic practitioners and, in particular, the participating students.

This conference report presents the groups' report on the presentations of the conference sessions, written by Master students (**contributing authors**) as part of their learning process on the Master course, EN313E “High North Dialogue: International Perspectives on Business and Governance in the High North”. Ph.D. students taking part in the Ph.D. course, DR437E “Governance in the High North: Implications for the Private and Public Sectors”, were assigned to check the summarizing and reflection of issues discussed during sessions, as well as the quality of the text and arguments in the groups' report made by Master students (**lead authors**).



Day 1

Session 1: The Blue Future and the Arctic: Political Perspectives

Contributing authors: Alina Zorinova, Aleksey Toropov, Ekaterina Litovchenko, Pavlo Andriichuk, Shuyi Shi, and Anastasiia Ponomareva. **Lead author:** Julia Olsen



Edward Bannerman, advisor to Vice-President Jyrki Katainen at the European Commission

Edward Bannerman, advisor to Vice-President Jyrki Katainen at the European Commission, opened the session by stating that sustainable development is the way forward for future global development. There has been considerable scientific emphasis on sustainable challenges during recent decades. However, many other issues will require a sustainable approach. Our careless way of living has damaged nature, and the recovery process will take hundreds of years. People in developed countries consume much more than they need, compared with those in less developed countries. According to researchers, population growth during the next 15 years will be significant. Are there enough resources for everyone? There is a need to understand

how much resources population is using for living and what the result is. Unfortunately, many resources are limited and nonrenewable; some will not last more than 20-30 years. Moreover, many more people will experience a lack of fresh water in the next 50 years. Arctic development has a prospective role to play for the future. It may solve many of the above-mentioned problems. However, future development will require the implementation of the circular rather than the traditional economy. Mr. Bannerman concluded that more investments are needed for technological development in the Arctic.

The opening line from Grete Ellingsen, State Secretary (Ministry of Local Government and Modernization, Norway), was that the Arctic Ocean is like a treasure box of resources and possibilities. There is a need to use the ocean's treasures in a sustainable way through international cooperation. Norway is an Arctic country, more sea than land, and 80% of its seas are located north of the Arctic Circle. The Arctic Ocean and its resources are very important for Norwegian economic development. Thus the aim of future development is to be among the most creative and sustainable regions in the world. The questions about climate change, emissions and population growth are of great importance to Norway.

They concern fisheries, fish farming, and food security. All these fundamental changes lead to new opportunities, and business needs to be developed in a new way (blue-green development). Oceans cover 70% of the world's surface, but less than 5% of global food production comes from the sea. So, how is it possible to increase production from the sea? One way is to develop better commercial use of the sea's food chain. Another way is the use of biotechnologies. The Arctic Ocean is the home of Arctic fish, amongst which



Grete Ellingsen, State Secretary, Ministry of Local Government and Modernization.

are many unique and important species. However, other species will be important in the future. Sustainable development is an important goal, not only for the Norwegian government but also for the majority of people. Sustainable management does not only depend on national regulations; successful international cooperation is also important if sustainable development is to succeed in the Arctic Ocean. Norway encourages sustainable development in the High North through different types of cooperative activities in the Arctic, such as the Arctic Council, Barents Cooperation and the Nordic Council of Ministers. It is very important for many young people to be interested in the High North; in order to be able to succeed in the future, it is vital to have young specialists and their enthusiasm and knowledge. Many students today represent the leaders of tomorrow and they will have a crucial role in the development of our common future.

Aaja Chemnitz Larsen, Member of the Danish Parliament (Greenland), highlighted that the human dimension holds the key to sustainable development in Greenland. It is important to apply a holistic approach to the development of the Arctic, with a strong focus on the human dimension, human rights, and indigenous people's rights. Four million people live in the Arctic and they are central to its future; it is of increasing importance to understand their livelihoods. Local communities are facing a number of challenges. For example, climate change affects the Arctic environment and animals, and it has a great impact on the Arctic people as well. Greenland's economy is currently under great pressure: there is a lack of proper reforms, mineral and oil prices are declining on the world market, and the economy is mainly based on the export of fish. The growing international interest in the Arctic region is very much welcomed by Greenland, which has a long list of new business opportunities that are yet to be realized. Currently, fisheries make up 90% of Greenlandic exports. Greenland welcomes 50,000 tourists per year and hopes that this number will increase in the future. They are working on attracting more investments in the region. However, the human dimension must play an important role in future Arctic development.

Tomas Norvoll, President of the Nordland County Government, addressed the topic of sustainable development of the Arctic region. He mentioned two recent events that may influence the Arctic's future. The first is the Paris agreement on climate change. The second is the Arctic Investment Protocol, which defines the Arctic region as the world resource treasury and establishes six principles for its sustainable development. Mr. Norvoll pointed out that many countries have an interest in the region, and it is important to build a resilient society in the High North based on the development of economic activities. The topic of Arctic development is especially important for Norway, as its income relies heavily on the activities of the High North: fisheries and other seafood production, mineral and oil extraction and so on. Ninety percent of Norwegian income is generated by sea-based activities. Moreover, 10% of the Norwegian population lives above the Arctic Circle. Generally, the trigger for discussions on the Arctic's sustainable development is the significant influence of climate change on the region. For instance, a rise in temperature is happening much faster in the High North than in other parts of the world. This provokes the melting of ice, changes in marine lifestyle, ocean acidification, etc. In this respect, it is crucial to carry out scientific activities in the region to prevent negative changes. Tomas Norvoll concluded with the importance of creating a full value chain in the High North.

Canadian Professor *Tony Penikett*, mediator and negotiator, and former Premier of Yukon Territory, in his presentation, "Resources: Who Benefits?", introduced the Yukon renewable resources co-management model. He emphasized the important variables of this development: local employment and environment protection; maximum regional economic benefits and minimum negative social impacts; national revenue; and global demand. However, as he pointed out, in fact, the power structure for non-renewable resource users is very different due to global (multinational corporation) demand; national government revenues; regional economic and social interests; and community employment and environmental protection. Therefore, the community, which suffers, has very little influence on the issue of utilization of resources. This is not beneficial for Arctic development in the long term. In conclusion, Prof. Penikett suggested the establishment of the "Arctic Standard". He has encouraged a university and/or NGO to start developing a

database with information on Arctic resource deals, wages, resource-revenue-sharing, and benefits agreements. Then it might be possible over time to establish best practices and/or an “Arctic Standard”. With the help of this database, different projects can be more easily compared with each other.



The speakers of session 1 takes questions from the audience, moderated by Arne. O. Holm, editor-in-chief of High North News.

Session 2: Politics and Economy of the Arctic

Contributing authors: Zarina Dzioeva, Timothy Hughes, Tatiana Kharchenko, Daria Kopalina, Irina Pylypiv, Viktoriia Shuflińskaia, Dmytro Shytikov, Marat Tukhvatullin and Jiyeong Kim. **Lead author:** Gudrun Ros Arnadóttir

Professor *Michael Byers*, from the University of British Columbia, in his presentation, “From Extinction Tourism to Extreme Oil: Is Arctic Economic Development Such a Good Idea?”, focused on the effects that both tourism and the oil industry have had and will have in the Arctic. Climate change has made these operations possible, but they now contribute to climate change themselves in a feedback loop that needs to be broken. There is an irony in being able to see and work in the Arctic because of global climate change, and then adding to it. The excitement of Arctic tourism and oil has not taken into account the reality of climate change as it is today, according to Professor Byers. Experts are operating on information about climate change from 10 or 5 years ago and it is paramount that the information is updated.



Michael Byers speaks about oil, tourism and climate change in the Arctic.



Jan-Gunnar Winther

Jan-Gunnar Winther, Director of the Norwegian Polar Institute, introduced what he considers important building blocks for successful development of the Arctic: “Building Blocks for a Successful Development of the Arctic”. Peace and stability is the first block. The world is full of conflicts, but the Arctic stands out as an extraordinarily stable region. This peace cannot be taken for granted as contemporary conflicts in other areas could have spillover effects. The region has been built up through sound respect for international law and smart institutional building and these values now need extra care and stimulation. A successful Arctic Council is also important to the future of the region. The institution is 20 years old and has created throughout the years policies that have shaped the Arctic. The Arctic Council has been instrumental in finding solutions to regional challenges and been a model for regional governance, knowledge and stability. The combined effect of a growing Arctic Council, both as the number of players increases and the importance and relevance both

regionally and globally grows, calls for thoughtful consideration of the future role of the Arctic Council. The Arctic region will become more important as the northern waters’ biomass increases in a warmer world. Management of the Arctic needs to follow the highest standards available with conservation and sustainable use of the guidelines. The Arctic can become a leading star in blue and green transition. Business leaders should think, “What works in the Arctic works everywhere”. Implementing the Paris Agreement is another important project. Business needs to be in harmony with the people of the North. There should be no development without the input of the local population. Indigenous people constitute around 10% of the Arctic population. They need and should take part in knowledge-based business management. A possible Arctic investment protocol could be to develop the human capital of the region. No one nation can sustain the knowledge base needed in the Arctic. International cooperation is therefore necessary to investigate and monitor changes in the Arctic.

Professor *Lassi Heininen*, from the University of Lapland, in his talk, “The Arctic as an Exceptional Space in International Relations: Critical Reading on International Relations and Geopolitics”, described the Arctic as exceptional in international relations, concerning both international law and geopolitics. The political stability of the Arctic is, however, rarely discussed as part of geopolitics and there is a need to change this. One reason for this is that people see the end of the Cold War as the end of geopolitics. Geopolitics has been mystified to encompass only military issues, but that is a very narrow understanding of the issue. Geopolitics more widely is about social issues, about people living together in spaces. Even maps of the Arctic are political, in the way that they portray the region. Geopolitics is the politicizing of physical space. When Norway decides to give access to oil drilling, it is a geopolitical issue because it affects how people deal with the land. When there is talk about state sovereignty that is geopolitics. There is a need to focus on and acknowledge the achievement of the Arctic as a stable region. It truly is an achievement. In addition, many other regions would love to have reached this level. The Arctic used to be a military theatre, but the people of the Arctic became focused on environmental and human security instead and pushed their



Professor Lassi Heininen

governments to act in accordance. The evolution of the region into a peaceful one was no accident or coincidence but the result of a concerted effort of its people.

Frode Nilsen, CEO of Leonhard Nilsen & Sønner, spoke in his presentation, “Arctic Competence for Arctic Operations”, on behalf of LNS, a mining owner and contractor and a tunneling contractor. LNS tries to combine the best of the mining and tunneling industries. They engage in long-term projects rather than looking for short-term profit. They operate in numerous locations, both within the Arctic and outside of it, for example in Svalbard, the Faroe Islands, Iceland, Greenland, Hong Kong, Chile, and Antarctica. Mr. Nilsen discussed the specific challenges the company faces in the Arctic. Chief among those are environmental challenges, the long distances, and the difficulty associated with creating the competence to work under tough weather conditions. One needs to live in the area to know how to operate in it. There are also issues with bureaucracy and political slowness; it is very difficult to find finance for mining projects in the Arctic and acceptance from the indigenous peoples. So why should there be mines in the Arctic? Mr. Nilsen provided a few reasons. Europe consumes 20% of the minerals and metals in the world but produces only 3%. There are many large deposits of minerals and metals in the Arctic, and green change relies on minerals, copper, graphite, quartzite and many more that are found in the Arctic. How should it be done? By maintaining high environmental standards, using companies that have experience, in close cooperation with local authorities, while educating the local people, and involving native people in the operations. Mining in the Arctic is one of the main solutions for the problems of climate change, according to the speaker. The Arctic governments should set up an investment fund for native and local people to invest in projects in their own region. In Greenland, they have agreements with authorities that ensure that at least 75% of the workers will come from the local community; if these workers do not have the necessary education they will educate them in Greenland or possibly abroad.



The panel of session 2, moderated by Heather Nicol Professor of Trent University, Canada

Anu Fredrikson, Director of the Arctic Economic Council Secretariat, in her talk, “Arctic Economic Council: Sustainable Business Development in the Arctic”, introduced their vision for future business opportunities in the Arctic. The Arctic Economic Council is a new organization that had its inaugural meeting in 2014. They are an independent organization, whose membership mirrors the Arctic Council. Their goals are to establish strong market connections between Arctic states, support public-private partnership, create stable and predictable regulatory frameworks, and encourage knowledge and data exchange between industry and academia.

Sven Roald Nystö, Senior Advisor at ARRAN and former President of the Norwegian Sami Parliament, spoke of the important cultural connections territorial affiliations have for the Sami, as well as for all indigenous people. Nature is important to Sami livelihoods and culture, as it gives an easy access to an abundance of

resources. In Norway, there has been a close relationship between the Sami and the state, characterized by dependency. The state should, in his opinion, focus on application-based subsidy schemes for the protection of traditional industries. However, the Norwegian state has recently offered political support for projects encroaching on Sami lands, and this now troubles the relationship. The Sami parliament welcomes the opportunity to cooperate with global players and industry, but this need to happen with the participation and acceptance of the Norwegian state. If this type of cooperation does not occur, the Sami public and Sami parliament will be forced to refuse all projects on their lands. There could be a long-term negative effect on Sami business development if this happens. It is of paramount importance that the indigenous youth are able to take a proactive part in the development of the region. There is much work ahead, but Sven Roald is optimistic on behalf of the Sami.

Session 3: Blue Potential

Contributing authors: Pavel Belyaev, Victoria Filippova, Saiful Hasan, Lidiia Ievmenchikova, Maria Kiryukh, Dmitry Kovrov, Mariia Miliuchenko, and Yunhan Wang. **Lead authors:** Sayyod Nuritdinov and Barbora Padrtova.

Session 3 opened with a lecture on climate model projections of future Arctic shipping access by Professor *Laurence C. Smith* from the University of California. The speaker began by emphasizing that there are two known and certain factors influencing climate model projections: ice extent and composition of ice. These factors will surely decline in the future, making Arctic shipping more accessible. However, various unknown factors also contribute to future Arctic shipping and climate projections. The main part of the presentation dealt with modeling future climate projections and their usage. There are several dozens of such models, but all of them are of high uncertainty. Thus, the multi-model method should be used to make decisions. It involves many projections and provides the most reliable view of the possible future. Moreover, Professor Smith mentioned that the perception of the Arctic and ice in the Arctic has changed drastically over the last 150 years. In the 19th century, the High North was seen as a highly dangerous place and fighting Arctic ice was an extremely difficult task, while today shipping in the High North is seen as a common thing that faces several challenges. The speaker concluded that the Northern Sea Route through the Arctic will remain of high importance in the future. In addition, he noted that access to Polar Class vessels (PC6) is as important as climate changes in the Arctic, and wide access to them may significantly decrease the influence of climate factors.

Geir Ove Ystmark, Managing Director of the Norwegian Seafood Federation, opened his presentation by stating that the climate is changing and this has a significant influence on the seafood area. However, at the same time, people need to keep in mind and to decide how to solve two large issues. Firstly, population growth now constitutes one of the greatest challenges. In 1970, the Earth's population was 4 billion people; in 2011, it was already 7 billion and, by 2050, there is an expectation that it will rise to 9 billion people. With the increased population, demand for food also increases accordingly. Although 70% of the Earth is covered by water, only 1.8% of all food production is made up of seafood. Thus, the biggest challenge is to increase production of seafood from the ocean. Currently, Norway has the greatest potential for seafood and fish. Secondly, the fact that production nowadays only focuses on parts of fish means that there is a huge potential to use fish oil, as well as to process the tails and heads of fish. According to Mr. Ystmark, two goals should be achieved in the future: the first is to increase productivity, while using all parts of the fish; the second is to have a well-managed industry. Current Norwegian-Russian cooperation might serve as a good example. In future, production should increase and, thus, investments in a marine sphere are of the highest importance. It is also important to mention that, in 1971, the production of fish was 98 MT, but by 2011 the production

had increased several times – to 1,000,000 MT. The amount of production has further dramatically increased in recent years. There is greater utilization of new technologies; sea farmers use lasers, sound, shielding, offshore bases, etc. An important element is also ocean forest and fish farming; farmers are able to create natural conditions for fish. The “Blue Future of the Arctic” refers to the marine world; there should be more emphasis on and investments in this.



Q&A during one of sessions.

Felix Tschudi, Chairman, and owner of the Tschudi Group, in his presentation, spoke about his company and the history of the Tschudi Group. With roots dating back to 1883, the Tschudi Group is an offshore, shipping and logistic group. It has been focusing, in particular, on the east-west trading of cargoes and projects involving the Baltic, Russia and the CIS countries, including the High North of Russia and Norway. The speaker also talked about serving a wide variety of vessels and cargoes, generating savings in time, cost and emissions: large tankers, bulk carriers, liquefied natural gas (LNG), reefer heavy lift and multipurpose vessels. In his presentation, the speaker identified the fall in bunker fuel prices as a key reason for the decline in Arctic shipping. Because of a sharp decrease in fuel expenses, transportation costs have also decreased and that has had a negative economic effect on the development of cargo transportation in shortcuts. Mr. Tschudi said, “The economic calculations have changed since 2013, and the benefits of the Northern Sea Route (NSR) as a shortcut have largely been lost. The value of the time saved is much less compared to 2013.” The additional factor constraining the development of cargo transportation in the Arctic zone is a reduction in the availability of accompanying ice-breakers from Rosatomflot. This company owns a fleet of ice-breakers with nuclear engines and is the only company in the world with this specialization. In the past, Rosatomflot sought to provide services to foreign cargo carriers. However, today, the intensive development of the oil and gas project, Yamal LNG, and Sabetta Port demands the large involvement of a nuclear ice-breaking fleet that reduces the ability of Rosatomflot to maintain and assist commercial shipping operations. Prof. Lawrence Smith and Prof. Scott Stephenson used data from dozens of existing climate models and “translated” it with the use of a geographic information system (GIS) to devise an Arctic Transportation Accessibility Model (ATAM). Their model shows a simulated future of sea ice extent, based on climate models, and then calculates the fastest routes through the Arctic Ocean. Based on their research, the NSR is highly likely to remain the preferred Arctic shipping route, with only some outlier models predicting the Northwest Passage (NWP) as a significant transport route. In the second part of the 21st century, a more direct transpolar sea route, outside the Russian Exclusive Economic Zone and closer to the North Pole, may also become feasible. In the presentation, Mr. Tschudi has discussed the cargo transportation in the Arctic zone. On the map, he visually showed the navigable movement on the Kara Sea during the period from January 1, 2016, to May 10,

2016. Besides, Mr. Tschudi also referred to a research report produced by Copenhagen Business School, in which the multiple-factor analysis of cargo transportation through the NSR has been carried out. The speaker recognized that earlier produced forecasts of a rapid increase in movement for the NSR were excessively optimistic. However, according to world experts, the current cargo transportation recession is temporary. Despite the decrease in goods' turnover in the Arctic, implementation of the current deliveries of production to the High North continues all the same, and production is carried out in already developed oil and gas fields. The speaker concluded his presentation with the words: "The Arctic shipment isn't dead, but it has been postponed temporarily."

Egil Bergsager, Senior Advisor, Lukoil Overseas North Shelf, opened his presentation with the following statement: "Petroleum is considered one of the most important energy sources in the world". Both directly and indirectly, there is a need for oil in everyday life. It is believed that it will remain an important energy source for more decades. The Arctic area is one of the potential sources of petroleum. According to the United States Geological Survey (USGS) report, around 25% of the world's undiscovered resources lie in the Arctic. These statistics hence illustrate the importance of the Arctic. Moreover, the demand for petroleum is increasing because of the consistent economic growth of the big economies of the world. A few Asian emerging countries are the big consumers of petroleum; the Northern Passage could be the new shipping route to supply petroleum to Asia. On the positive side, the shipping industry in the Arctic is also developing and it provides the potential for the new shipping route to Asia for petroleum. The maritime border agreement is fair and controlled. Norway and Russia's common border has remained peaceful and free of conflict for more than 100 years. Norway and Russia maintain good cooperation: both vertical and horizontal cooperation. The official name of the treaty is "Maritime Delimitation and Cooperation". Norway and Russia can help each other in many ways to exploit the valuable resources in the Arctic; their controlled and smooth relationship also gives hope for the potential future of the petroleum industry in the Arctic.

Hilde Sjurelv, CEO at Sjurelv AS, said that, since the beginning, one of the company's core activities has been to develop innovative cultivation technology, which is needed to make the industrial cultivation of seaweed a reality in Norway and Europe. In 2005, the shrimp industry collapsed in Norway. Needing to find different business, the company looked at short-term and long-term possibilities. They wanted to earn money, to hire employees, and to contribute to value-creation. After some investigation and cooperation agreements, it was decided to start a business involving seaweed. They had the vision to enable large-scale ocean farming of seaweed for the production of food, biochemicals, energy and other valuable products. The company had two different political initiatives going on at the same time. They needed the politicians to confirm that cultural planning would open to seaweed. It took six years from the initiative to receiving a decision from the politicians. This was the start of seeing seaweed as a possibility and they were pioneers. Their goal was to be an innovative seaweed business developer, and in addition to provide employment for the local population. Their business opportunities have the potential for innovation. The governmental framework is concerned with building the infrastructure. Their experience shows that when employing local people for work at seaweeds plant, it is necessary to have competent employees with a good standard of education. According to Ms. Sjurelv, the seaweed in Northern Norway has a tremendous future. The reason for this is that it has more sugar, it grows faster and it has a longer sea swirl than seaweed in any other part of the world. However, the important thing is the value of using seaweed as future energy. Seaweed is a green alternative that might just save the planet.

Session 4: Arctic Innovation

Contributing authors: Sasha Avdeeva, Nodirjon Boymirov, Nataliia Storchak, and Aleksander Svendsgård.

Lead author: Jon A. Skinner



The panel of session 4 was moderated by Petter Nore Norwegian of the Norwegian Ministry of Foreign Affairs.

Pan Xingming, Professor and Director of the European Studies Centre, School of Advanced International and Area Studies, East China Normal University, emphasized that China is a major developing country in the Northern Hemisphere. It is actively participating in Arctic governance and, “despite its lack of physical proximity to the Arctic, China has demonstrated a significant and sustained interest in the region”. This interest could lead to the growth of business in the Arctic region. The professor covered the motivations for Arctic governance; the impact of Arctic issues for China; and the approaches China utilizes to participate in Arctic governance. He also noted the environmental impact on the Arctic of climate warming and its consequences, including the accelerated melting of Arctic sea ice and the opening of Arctic waterways. Arctic climate and environment changes have an effect on China’s climate and environmental security, while also providing new options for resource development. Dr. Xingming also discussed the main advantages and disadvantages of China’s participation in Arctic governance. He described the main avenues of China’s participation in Arctic governance as enhanced Arctic research, enactment of laws and regulations at the national level and strengthened multilateral and bilateral international cooperation. He also emphasized China’s interests in the Arctic. These include sailing or transit rights, resource development interests, scientific investigation and environmental protection. In conclusion, he emphasized that China respects the sovereignty and interests of the Arctic states in the Arctic. However, China is a major global player, which is determined to actively participate in Arctic governance through multilateral and bilateral cooperation; it advocates international law as the yardstick for Arctic governance, safeguards their legitimate interests in the region and can contribute in financing, technology, traffic flow infrastructure, resource development and ocean shipping advancement. China has proven willing to pay more for Russian LNG than Australian LNG and has long-term energy “security” objectives; this means maintaining strategic options.

Ken Coates, Director of the International Center for Northern Governance and Development at the University of Saskatchewan, stated that to make northern life better, there is a need to process a phenomenal amount of information. He pointed out that 90% of the scientists researching the Arctic are alive today. At the same time, there is a need to recognize the degree to which understanding the impact of innovation can be the key to a successful future. There are now breakthroughs in many branches of industry, such as mobile

medicine, 3D printing (it is even possible to print chocolate), internet surgery, etc., with more to come. The impacts of these innovations are often lagging. He emphasized three things in the Arctic that could be improved: high-quality jobs for people currently of low skill, more targeted research and better access to capital.

Jonathan Read, from Boeing's Phantom Works International Strategy and Program Development, highlighted the rule "Engage-Innovate-Create." The presenter stressed the need for transformation of innovation: embrace open innovations to achieve incremental and disruptive change; make cross-function and industrial collaboration; organize and utilize all available assets; have a commercial market industry. Accordingly, to introduce business innovation, it is necessary to work with the local authorities regulating oil and shipping. He also pointed out that airborne communication coverage is more available today. In conclusion, he pointed out that all data related to biological information is and will be shared directly.

Inge Forseth, the Chief Operation Officer Technology and Software for the AKVA Group, noted in his presentation that the challenge for the coastal zone is growing exponentially, due to the environmental impacts of concentrated activities. He noted that development licenses could be assigned to encourage significant innovation and sustainable investment. In addition, he noted that the AKVA Group provides technology for the aquaculture industry for all the salmon producing companies in the world. Viewed from a global perspective, the Norwegian salmon industry is very small. However, the "commercial value" of the Norwegian industry is proportionately much larger. There are many opportunities for salmon farming in the North, owing to the higher quality of the water and optimal temperature.

Øystein Braathen, Leader of Statoil's Arctic Development Program, provided insight into Statoil's "Risk Based Approach" to the challenges of the Arctic, in which risks are assessed to ascertain the most viable methods. The Barents Sea, in particular, has a low risk of icebergs but has other issues, such as marine icing (where ice sticks to boats in layers, eventually flipping the boat upside down). Solutions for marine icing, like coating the hulls of vessels, were also represented. Mr. Braathen also emphasized that there is not just one Arctic but distinct regional differences. For Statoil, it is important to compete globally and to pursue regional operations with others. Statoil continues to build on more than 40 years of experience in oil and gas production on the Norwegian continental shelf, where they are committed to accommodating the world's energy needs in a responsible manner, applying technology and creating innovative business solutions. Statoil's core positions are in the Norwegian Barents Sea, on the east coast of Canada, and in the sub-Arctic. Mr. Braathen concluded his speech by stating: "If you want to go quickly, you go alone, but if you want to go far, you have to go together."

Hege Berg Thurmann, Group Leader in the Arctic Group, DNV GL Oil & Gas, spoke first about the general complexity of the LNG market in the Arctic region. This complexity necessitates new technology and standards being made viable, but, as of today, there are no proven tools and equipment that will provide this viability. There is also a need to adapt to the local environments and to understand that practices from other areas are not applicable in Arctic areas. Another issue that has received little attention up until recently is unpredictable weather forecasts. There is a lack of statistics in the region, making any kind of forecasting much more challenging than in already explored areas. Ms. Thurmann also placed considerable emphasis on the need for collaboration in order for Arctic development to happen.

Day 2

Session 5: Presentations from Nord University

Contributing authors: Anastasiia Botnaresku, Solveig Gaundal, Vladimir Dutov, Kirill Gurvich, Victor Kakhankin, Alina Mulyukova, Tetiana Stefan, and Soyeon Park. **Lead authors:** Denis Iakovlev and Neil Oculi.

Scenario workshop in connection with Master course

The opening words of this session were given by *Indra Øverland*, Senior Researcher at the Norwegian Institute of International Affairs and a Professor at Nord University. In his presentation, “What has Happened in the High North during the Last 15 years?”, he argued that “there is a lot of uncertainty in the world.” It is difficult to predict the future. A well-documented case of such uncertainty, as explained by Professor Øverland, is the Kodak company. This company was the market leader. However, their position as a global leader in the photography industry radically changed with the development of new digital cameras. The company failed to predict their impact. Kodak’s turnover was 13.3 billion USD in 2003. In 2012, the company became bankrupt. Professor Øverland examined the failures of the Nokia company as another example. Nokia was one of the market leaders in cell phones. In 2010, it was the largest producer of smartphones. In 2011, the situation changed dramatically; Nokia lost its market share to iPhone. Touch screen caused a revolution in the market; iPhone was the best in that technology and touch screen won. In explaining different scenarios, Professor Øverland highlighted two books. The first is *International Arctic Petroleum Cooperation: Barents Sea Scenarios* by Anatoli Bourmistrov, Frode Mellemvik, Alexei Bambulyak, Ove Gudmestad, Indra Overland, and Anatoly Zolotukhin. This book looked 10 years into the future. The second book, which also looked 10 years ahead, was published in 2004 with a focus on the High North. This book is *Big Oil Playground, Russian Bear Preserve or European Periphery? The Russian Barents Sea Region towards 2015* by Bjørn Brunstad, Eyvind Magnus, Philip Swanson, Geir Hønneland and Indra Øverland. There, the authors described three scenarios, each containing something useful in relation to the future. However, there are many uncertainties in predictions. For example, these three scenarios from 2004 did not predict the Shtokman gas field project, which, at its inception, was an exciting opportunity. However, the 10-15 years scenarios demonstrate how difficult or even impossible it is to predict the future. For example, none of the scenarios foresaw the Ukraine revolution, the financial crisis of 2008 or the Paris 2015 climate agreement. There were also changes in the energy sector. For instance, from 2008 to 2016 the costs of solar panels decreased to 80% of their original cost. The scenarios also failed to predict the shale revolution in North American gas, etc.

During Professor *Anatoli Bourmistrov*’s presentation, the concept of how to create scenarios with scenario methodology was introduced. The reason behind his scenario introduction was that the audience could understand what methodology lay behind the scenario building, which was presented later by the best scenario builder group. Opening his presentation on scenario methodology, he suggested to the different business representatives at the *High North Dialogue* that “the students are the future” and that scenario building, therefore, can create a possible picture of the future, so that we can be prepared for several outcomes. He then stated, “Scenario building is there to create discussions”, and, by combining 10 different people from different backgrounds and educational levels (Masters- and Doctoral students), the discussion of predicting the future began. The students had 24 hours to create three different scenarios based on assumptions, uncertainties, and some underlying wildcards, which could be taken into consideration. Professor Bourmistrov then described how the winners were selected by an evaluation panel, similar to the world-known “idol” competition. Besides Prof. Bourmistrov himself, the other judges were Finn Roar Aamodt from Statoil, Lars Kullerud from the University of the Arctic, Hanne Østerdal from Nordland County Council, Michael Byers from the University of British Columbia, Indra Øverland representing NUPI and Nord

University, and the moderator behind the scenario exercise and the evaluation panel, Elena Dybtsyna. They concluded by announcing which of the scenario building groups was the winning team.



The winning group receive diplomas and applause.

The winning team of graduate students presented three scenarios for the fishing sector in the High North, 15 years into the future. The first scenario, entitled *Keep Calm and Go Green*, predicts high infrastructure development, in which the North Sea Route will provide an increase in fishing, transportation, and the tourism sector. This scenario predicts a high chance of Arctic delineation issues and migration from the Arctic. In this scenario, there is medium cooperation within the Arctic and a low chance of moving from a fuel economy to a greener economy. There are key implications of this scenario. They include increased demand for marine food, improved global food security, change in consumption behavior and new fishing regulations. The second scenario, *Work Hard, Play Hard*, assumes that the North Sea Route will serve as a corridor for global markets. However, there will be little involvement by indigenous people and possible conflict within the region. This scenario predicts great pressure on primary industry and the Arctic being a resource frontier. There is also an increase in science and development in this scenario. China becomes an important player in the Arctic. Key implications of this scenario include overfishing, strict regulations, and increased conflicts. The final scenario, *Hands Off*, predicts greater cooperation between Arctic and non-Arctic nations, in which China's investment in the Arctic decreases. Both indigenous people and the Arctic Council have much more influence on the future of the Arctic. Possible implications include fish farming in the northern countries, increased disease from wild fish and an increase in the price of wild fish. A major part of scenario building is predicting possible wildcards: those things or events that are less likely to happen but have a great impact on the scenarios. The wildcards for these three scenarios include cooling of the Arctic, meteorite/aliens, major oil spill, and military conflicts.

Business Index North

Erlend Bullvåg, the Dean of the Nord University Business School, provided a synthesis and results from the Business Index North (BIN). The idea of this index is the valuation of Arctic development according to the business opportunities and challenges in the region. He articulated that, through business, people could have a better understanding of what is happening, as well as improving well-being. It is important to have the best, informed criteria to evaluate business. The level of this index should be measured in a periodic report with insight and trends in business activity considering the different groups, from investors to media. This project has been implemented from November 2015 until December 2018, but it is expected to continue. The Barents Euro-Arctic region was chosen in order to conduct the BIN research. That area includes the Nordic countries and Russian, regions in the North, like the Murmansk region, the Republic of Karelia, the

Arkhangelsk region, the Republic of Komi, and Nenets Autonomous Okrug. The BIN reflects different economic policies, accounting techniques and challenges or opportunities for economic development in the High North. The development of the High North brings global attention to the region, as it can provide new sea routes, new opportunities, but it also offers new challenges, such as difficulties in accessing resources. Mr. Bullvåg acknowledged the efforts of different contributors to the BIN. They include Nord University, Nordland County Council, the Norwegian Ministry of Foreign Affairs, etc. The speaker emphasized the following topics: People in the North, Work in the High North, Industry and Production, Innovations, Enterprises, Infrastructure and Logistics, Natural Resources, and the Highlights of International Cooperation. The BIN showed different aspects of Arctic development. For example, the graph of population changes shows that population in the BIN area is growing significantly slower than in Norway, Sweden and Finland in total; that means that something is going wrong in the development of this region. Another big problem is that there is a decrease in the youth population in many countries such as Norway, Sweden, and Finland. The next aspect was Work in the North. The High North employs almost 750 thousand people, that is 7.9% of the workforce in the Nordic countries. The majority of the workforce is employed in agriculture, forestry, fishing, transport and storage, public authorities and national defense, construction, education and human health. There is less employment in financial and insurance activities, trade, information and communication, mining and real estate, and in professional and scientific development. The Arctic needs to create new workplaces at a higher rate, as the job creation speed in Norway, Sweden, and Finland in total is five net jobs per 1000 workers per year, while in the North this speed is just 2.2 net jobs per 1000 workers per year. The last important aspect, covered in the presentation, was Innovations. During the last 20 years the region, which had the greatest number of patent applications in the Nordic countries, was North Ostrobothnia. North Norway has a significant part of the products, which are new to the enterprise or to the market. For example, Russia shows the shifts from “old” to “new” products just in the Sakhalin area. These changes are oil driven. It was noted that the High North should be more innovative in unusual spheres as well, such as logistics or tourism. To conclude, the speaker climate change is creating new challenges but also opportunities. In addition, different components are needed for the development of business in the North: transportation, infrastructure, working places, innovations, knowledge and so on. The development scenarios of the Arctic region were compiled based on these assumptions. The Arctic region is undergoing significant changes, which bring opportunities and challenges, but having more people, jobs and innovations will make the High North more attractive.



Erlend Bullvåg presents Business Index North (BIN).

Session 6: The Arctic and the Blue Dimension

Contributing authors: Roman Babaev, Alina Buzolina, Sofie Gundersen, Valeriia Kolesnyk, Marina Markova, Artem Rusanov, John-Fredrik Soleim, Johanna Maria Sormunen, and Milena Vilinskaia. **Lead author:** Mark Stoller



The panel of session 6 was moderated by Jan-Gunnar Winther, Director of the Norwegian Polar Institute.

Tore Hattrem, State Secretary, Norwegian Ministry of Foreign Affairs, addressed ocean and ocean-based activities regarding common and shared fisheries and Norwegian policy in relation to neighboring countries. Norwegian welfare depends on resources from the sea, and Norway has an interest in seeing clear and predictable rules connected with offshore jurisdiction. Norway intends to pursue close cooperation with its neighbors to ensure the oceans remain healthy and productive. Since the agreement with Russia in the Barents Sea, Norway has granted three licenses to encourage future value creation and employment in the blue economy. The post-agreement period marks a ‘new chapter’ in Norway’s history, underscoring three points: firstly, the importance of clear rules for ocean jurisdiction, and continued commitment to the UNCLOS framework; secondly, ensuring close cooperation with neighbors on the matters of harvesting and commercial resources; thirdly, ensuring the sustained health and productivity of the oceans. Norway will continue to advocate this position at the *Our Oceans Conference* to be held in the United States in September of 2016. Existing challenges to ocean productivity include global warming, temperature rise, and melting snow, which threaten traditional livelihoods, and the migration of mussels and fish stocks. In closing, the speaker stated that the Norwegian strategy for developing the potential of the blue future is to commit to international cooperation, to develop new technologies to facilitate value creation in ocean environments and industries, and to seek innovative modes of economic and environmental stability for the future.

Finnish Ambassador, *Erik Lundberg*’s presentation identified the need for stronger cross-border cooperation among Nordic countries, and the desire for greater balance between environmental protection and sustainable growth in the High North. The Arctic Council must continue as the main forum for cooperation. It was stressed that Nordic countries are all very competent and have extensive and complementary knowledge that ought to strengthen sustainable development in the High North. Finland’s priorities are to see enhanced opportunities for sustainable development, greater protection of the natural environment,

attracting increased attention and employment in the High North, and working with local peoples. Finland's telecommunications and electronics industries were cited, along with the capacity to further develop clean-tech solutions. A strong desire for enhanced scientific knowledge was stressed. As a country with much land in the High North, and a large population there, Finland will contribute its cumulative experience in developing Arctic technologies and its knowledge of environmental protection to High North discourses. Finland has valuable experience in the maritime sector, especially operating in winter conditions, and will help to develop these opportunities; it also recognizes and encourages the strengthening of both the Arctic Council and the Arctic Economic Council (AEC) and commends the role of the United States as outgoing chair of the Arctic Council. Through the AEC, Finland also welcomes the role of the European Union in enhancing environmental and developmental sustainability in the region. In particular, Finland hopes to see growth in pan-Nordic tourism (through cooperation between Swedish, Finnish, and Norwegian companies) and the development of an Arctic business corridor to encourage local businesses to progress towards international stature. Collectively, Nordic countries have much to offer in terms of making the Arctic a sustainable place to live.

Jim Dehart, the Deputy Chief of Mission at the US Embassy in Norway, discussed how issues in the High North and the Arctic Ocean have become increasingly part of the United States' interest. The United States has been admittedly slow to recognize the importance of the blue future but, under President Obama, has adjusted its position. Secretary Clinton was the first to attend a ministerial meeting of the Arctic Council, and involvement has grown considerably since then. President Obama also visited the Arctic in 2015 and placed great emphasis on the importance of climate change to the region. "The High North has our attention, and the related issue of oceans has our attention," he said. As Chair of the Arctic Council, the US has committed itself to improving the economic and living conditions of the people there; to addressing impacts of climate change; and to enhancing Arctic Ocean safety and stewardship. The US wants to ensure the continuous forward motion of the Arctic Council and the important work it has done and looks forward to hosting the *Oceans Conference* in Washington DC in September, where it will focus on issues of sustainable fisheries, combating marine pollution, and the advancement of Arctic sciences. In closing, three points were made. Firstly, Arctic maritime issues are now a high priority for the United States government. Secondly, the US intends to pursue policies aimed at ensuring the Arctic is a zone of peaceful cooperation between all stakeholders and nations. Thirdly, a balance between economic opportunities and environmental concerns should continue to be pursued.

The presentation of *Helene Tofte*, of the Norwegian Shipowners' Association (representing 140 members in offshore trade), emphasized that the future of the Norwegian offshore will continue to be blue and that Norway will play a strong role in developing its potential for value creation and economic opportunities. Norway is currently the sixth largest shipping nation in the world by fleet value but faces challenges from the low price of oil and uncertainties from weakened growth and falling demand in key markets. To meet the demands of a growing global population, shipowners and operators are adapting to the needs for offshore food production and delivery and responding to demands for improved logistical infrastructure and nautical technologies. In the future, there will be more "Teslas of the sea" and various forms of electronic maritime transport, such as more electric ferries. To seize the opportunities, shipowners must not aim to conquer the Arctic Ocean but to master it. Norway is in a favorable position, having great experience creating value, employment, and promoting innovation in the offshore regions. A future challenge is to continue these practices in a more sustainable manner. In a short film, entitled "The New Blue", it was emphasized that the next 100 years will be the "century of the oceans."

Torgeir Edvardsen, the Senior Economist at OECD, provided details of the future ocean economy based on the recent research of the OECD's international futures program. Global challenges include climate change

and global warming, population growth, energy shortages, carbon emissions, and world economic growth. We cannot “squeeze” the planet but must harvest the “right fish”. The OECD expects a slowing of economic growth between now and 2060. Uncertainties will lead to a rise in new energy sources, such as Liquid Wind and Waterfall LNG, in countries like Japan, China, and South Korea. The oceans are under continuing stress from pollution and growing coastal populations. The main challenge is to develop the oceans’ potential without exacerbating these stresses. The OECD aims at a coherent forward assessment of growth potential and assessment of risks around future development and investment needs. The goals of the project are to heighten the visibility of the maritime economy; locate opportunities for sustainable growth; and assess emerging maritime activities. When it comes to international management of the oceans, sectoral approaches are inadequate, and a comprehensive and multilateral approach is needed. The OECD is developing the Ocean Economy Database and estimates USD \$1.5 trillion in oil and gas, and tourism. To strengthen the database, international data is needed. For policymakers, the OECD recommends greater international cooperation in the fields of science and technology, strengthened integrated ocean management, improvements to statistical and methodological bases of research, and building capacity for ocean industries.

The presentation of *Elana Wilson Rowe*, Senior Research Fellow at NUPI and the High North Center, addressed Arctic futures and complexity, and the question of what thinking about the future does. Rowe reflected upon experiences in Canada at Frobisher Bay, present-day Iqaluit, and stressed the importance of looking broadly at history and asking whether or not the Arctic is an exceptional or unique space. She cited Murmansk and Shtokman as “Arctic ghost projects”, those that are highly anticipated and hoped for but which do not come to fruition. Anticipating the future and actively planning for it is a fundamental task of modern government. In this context, narratives about the future come to matter to national, international, and local attitudes and developments. It is, therefore, important for educators to adopt a cautionary position and to develop training and education tools that are robust enough for the complexity of today.

“High North Hero”

Contributing authors: Marine Vié, Jie Tai, Nikita Redkin, Maksim Chupin, Vitali Rack, Elvira Kruchinina, and Elvira Pylypenko. **Lead author:** Valeria Guerrieri

Before announcing the winner of the High North Hero 2016, *Frode Mellemvik*, Director of the High North Center, explained that more than one year in advance, the High North Center of Business and Governance had started to discuss the possibility of assigning a prize to a “hero” of the High North. Thus, a committee composed of different scholars and people involved in the Arctic had been formed. Member of the committee, *Hege Berg Thurmman*, Group Leader Arctic at DNV GL, was given the floor to announce the first High North Hero. Speaking on behalf of the committee, she emphasized that the High North Hero Award has been created to honor a person, organization or company, which has contributed to the High North or to develop the High North region in recent years. The public were invited to nominate candidates, and a national committee of Arctic experts appointed by the High North Center selected the winner. In addition to the recognition of their efforts, the selected winner would also receive a prize of 50,000 Norwegian kroner and a High North Hero diploma. The selection criteria focused on business opportunities, job creation and innovation in the High North. In addition, the local and national impact of the candidates had also been taken into account. Overall, the committee received 37 applications, with the nominees coming from a range of sectors, including business, academia, and public service. All eight Arctic nations were represented, and both Northerners and indigenous candidates were included among the nominees. Ms. Thurmman further explained that the selection process revealed something, which the members of the committee already

suspected, namely that the people—both within and outside the High North—care deeply about the region’s future. For this reason, the specific choice to present this award during the *High North Dialogue* stemmed from the acknowledgment of the unique effort shown on this occasion to develop human resources for the High North’s future. Finally, to introduce the winner, Ms. Thurmann stressed that he is “someone who is all about seeing the tension in things and in regions, someone who, through dedication, knowledge and very great effort, has proven that it is possible for one person to have a tremendous impact on the matters one is passionate about”. For all these reasons, the committee decided to assign the High North Hero prize to a person who has worked hard highlighting opportunities for economic growth, business development and job creation in the High North, as well as raising international awareness on the High North economic potential. As a former Prime Minister, the High North Hero has been active for decades in forums and discussions connected to the Arctic, and he was the founding father of the EU Northern Dimension Policy, which many consider the first effort to include the North into EU Arctic policy. Finally, Ms. Thurmann revealed the name of the High North Hero 2016: Finnish former Prime Minister, *Paavo Lipponen*.



Paavo Lipponen accepting the first ever High North Hero Award.

Mr. Lipponen began his acceptance speech by thanking the selection committee and by describing the award as “one of the greatest moments in my life”. He expressed his appreciation for the conference as an opportunity to listen to Arctic experts and to learn something extremely valuable. Mr. Lipponen also stressed that the real northern heroes are those who work in different Arctic sectors, such as fishing, reindeer hunting or even the researchers, who risk their lives every day. In his talk, special mention was reserved for the indigenous peoples, who, particularly in Norway, Finland, and the United States, are constantly on the front line and whose role needs to be fully appreciated. The former Prime Minister then recalled some memories of his early life, which – since he was born in Lapland – was always surrounded by Arctic scenery. In fact, he first visited Sweden when he was two years old, later took a ship from Oslo to the United States to study at an American university and came back to the West Coast to work on a Norwegian ship, where he collected some great memories along with the Norwegian sailors. Regarding the themes discussed during the conference, Mr. Lipponen expressed his desire to comment from a sustainable development perspective rather than merely an

economic one. According to him, the environment is, in fact, the real issue in the Arctic, and the governments of the Arctic Council, especially the United States and Russia, need to address the threat posed by black carbon. As he recalled, John Kerry said last year that, in the Arctic, the damage caused by black carbon is two thousand times greater than that caused by CO₂. For this reason, Mr. Lipponen expressed his perplexity regarding whether anything is concretely being done about this issue. Although currently trying to explore ways to launch concrete projects, he also shared his idea that local heating methods employed in Northern and Western Russia should be revised. Regarding the United States, the questions that Mr. Lipponen addressed were quite similar: Where are the concrete steps? Why is more importance given to talk rather than action? In this sense, Mr. Lipponen recalled a successful example of the Northern Dimension Environmental Partnership, namely a project that received a financing of 1.5 billion euros in order to model wastewater-cleaning plants in North-Western Russia. This project has also produced positive effects on the

waters of Northern Finland, showing thus how Arctic nations are strongly linked with each other. Together with another plan aimed at finding a way to handle nuclear waste in North-Western Russia, this example shows how it is possible to achieve the concrete results that Mr. Lipponen strongly supports. According to the High North Hero, because of the challenges we face, it is vital to keep at least one line of cooperation open with Russia as well as with the other Arctic countries. Concluding his acceptance speech, Mr. Lipponen emphasized that he considers the High North award as a “Nobel prize” and that he intends to use it in order to facilitate the engagement of students and young people in the discussion of Arctic issues and in the development of projects.

Session 7: Future Arctic Leaders – Talking Barents

Contributing authors: Egor Alekseev, Benedicte Jonassen, Hege Kallbekken, Mikhail Kosmynin, Andiy Saller, Anastasiia Tabakova, and Aminam Talipova. **Lead authors:** Hema Nadarajah and Irina Zhilina.

The ‘Future Arctic Leaders - Talking Barents’ panel comprised of six young Arctic researchers and activists, who each gave their perspective on issues that need to be tackled in the Arctic. Victoria Herrmann from the Arctic Institute moderated the panel discussion. Some of the major themes discussed included environmental issues, sustainable development, cross-border cooperation, indigenous people, education and security in the Arctic.



Future Arctic Leaders – Talking Barents panel

Synne Bjørbæk, Deputy Mayor of Bodø, put forward her views on future resource management in North Norway, prior to the panel discussion of the young Arctic leaders. Referring to the abundance of the natural resources in the area, she described the northern counties as a “gold coast”. She introduced the concept of ‘white gold’, used to collectively group alternative (renewable) resources such as the hydropower energy sector, fisheries, aquaculture and tourism. Ms. Bjørbæk emphasized the colonial history of the “gold coast” term, implying a growing interest in the exploitation of the Arctic for the benefits of external stakeholders, most of which favor hydrocarbon development in the region. She believed that the main stakeholders in the High North should be local communities. According to her, oil and gas development cannot sustain the wealth of the local communities in the long term. Therefore, sectors ensuring local prosperity such as hydroelectric

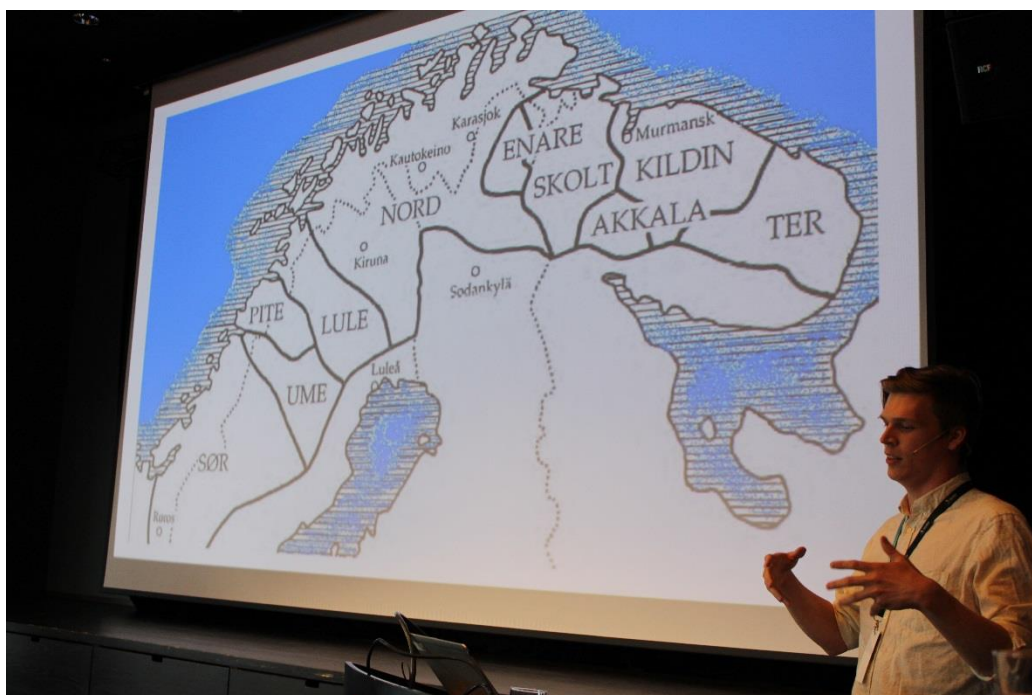
power, fisheries, aquaculture and tourism need to be prioritized. Ms. Bjørbæk raised the problem of liberalization of the companies operating in the area, which leads to loss of local ownership and control. She concluded by stating that the white gold belonged to the people of the North.

Timothy Hughes, of East China Normal University, raised several issues in his speech. He first talked about the 2013 US Arctic Strategy, which formed the pillars of the US chairmanship in the Arctic. In its strategy, the US did not emphasize the military's strategic importance, instead viewing it as a support for soft security issues such as search and rescue. Furthermore, the strategy placed a greater weight on the involvement of indigenous communities rather than on hydrocarbon resource development. Hughes then raised the topic of the China's role in the Arctic Region. To many Arctic members, China's involvement is deemed as being worrisome. According to Hughes, however, China's interest is necessary, as Asia would naturally become the primary export market for the Arctic's resources. Rather, the discussion should focus on why China has not been more involved in the Arctic.

Tim Andersson, of Barents Press International, introduced issues, which have, in his view, been shaping journalism in the Barents Region: funding, limited interest in and insufficient knowledge of local communities in neighboring countries, and bureaucratic barriers to accessing Russia. Given the decreasing salaries of journalists, many have turned to freelancing. There has also been a general unawareness and lack of interest among the young regarding developments taking place in the High North. Many prefer to travel south rather than explore neighboring countries in the North. Strict visa requirements have also made it more challenging for Scandinavian journalists to work in Russia. This hinders cross-border cooperation, which is important for the development of high-quality journalism. Mr. Andersson emphasized that building personal relationships and sharing experience and stories are essential for international journalism.

Polina Porotova, of Northern (Arctic) Federal University, raised the important issue of environmental pollution, which had yet to be discussed during the conference. The issue has not only regional effects but is also global in scale. Though the Arctic has not been the source of the pollution, it has often been the most impacted. The Arctic Monitoring and Assessment Programme documented an excessive level of pollutants in plankton, marine mammals, and humans. These pollutants are bio-accumulative and do not degrade over time, with many of them directly affecting the reproductive system of an organism. Ms. Porotova emphasized the threat of pollution to Arctic communities that rely on subsistence hunting and fishing. Pollutants are passed down to a child through the mother's milk during breastfeeding. Environmental pollution directly affects the demography of an already sparsely populated region, which would eventually have an impact on its economic development.

Barbora Padrtová, of the Transition Centre for European and North Atlantic Affairs, gave an overview of the research question in her Ph.D. dissertation, which aimed to identify the key actors in US Arctic affairs and how they securitize their respective agendas. She approached the question using securitization theory, developed by the Copenhagen School. The concept of securitization refers to the process of increasing the importance of certain problems to the level of existential problems, for example, matters of national security. First, she identified the main state and non-state stakeholders, or securitizing actors, based on their presence, involvement and the level of intensity of engagement in the region. She then proceeded to analyze and classify these stakeholders' Arctic strategies, tools and mechanisms used in formulating their agendas. Inherently, Padrtová's research addresses the following: What are the goals and interests behind securitizing one issue over another?



August Sjøvoll addressed Indigenous issues in the Barents Region

August Sjøvoll, Environmental Activist, himself being Saami from Norway, spoke about the challenges that indigenous people face in the Barents Region. Conflicts between the Saami and non-indigenous people have been rooted in the varied conceptual understanding of borders. The land of the Saami (Sápmi) overlaps with the national borders of Norway, Sweden, Finland, and Russia. Sápmi as a whole is rich in natural resources and, therefore, of interest to the extractive industries. Sjøvoll gave an overview of the history of the forced Norwegianization of the Saami, prohibition of the Saami language, and the boarding school system that nearly destroyed their culture. On the other side of the border during the Cold War, the Soviet government forcefully relocated the Saami to the cities, trying to assimilate them with the non-indigenous population. National policies towards the Saami have changed in recent times, but the legal status and rights of the indigenous people differ from country to country. Mr. Sjøvoll stressed that strong Barents cooperation is very important for the Saami because it can unite different Saami groups, make their voices stronger and serve as a tool to educate about indigenous values, which are about “living with the earth, not of it”.

Andreas Østhagen, of the Arctic Institute, stated that he had to move away from the North in order to understand the issues faced in the Barents. He emphasized the need to disseminate accurate information to non-Arctic residents, particularly to policy makers in Brussels and Washington D.C., where there is often a lack of knowledge and sometimes even a flawed perspective of the North. He highlighted that the best part of the *High North Dialogue* has been the inclusion of the young: the future decision makers.

Discussion panel

Speakers were asked to weigh in on how they would like to see the current situation change, with respect to the environment, education, and security. They were also asked for their views on what were some of the biggest challenges and opportunities for cross-border cooperation. From the indigenous perspective, one of the main challenges was to maintain ties with Saami communities across borders, particularly with Russia. Language has been a barrier to this integration, as the Saami language differs from one region to another. For example, in the case of Russian Saami, dialects are based on the Cyrillic alphabet instead of the Latinized forms of their counterparts in Scandinavia. Another challenge concerns different national human rights

obligations with respect to indigenous people. Such geographical and language fragmentation, as well as the general lack of political empowerment, weakens the indigenous voice. Due to the poor representation in the media, Scandinavia and Russia each have little knowledge of the other. Expanding the visa-free regime in the Barents Region would facilitate cross-border journalism, which would contribute to better understanding, trust and dialogue between the neighboring countries. Trust-building measures can serve as a tool for increasing security in the region. In recent years, the relationship between the Arctic States has generally been affected by international conflicts taking place outside of the Arctic. As such, the Arctic remains a peaceful region where international cooperation is sustained. Nevertheless, international instability does embody certain challenges for further developing cooperation in the region. Education and work exchange should be facilitated to encourage people-to-people contact and support the young professionals who will shape the future. Another topic raised during the panel discussion was on climate change and environmental pollution. One needs to approach the policy of the 2 degrees Celsius threshold critically and to stimulate the dialogue not only on combating global warming but also on adapting to the climate change.

The discussion during this session was focused on many forms of cooperation in the Barents Region. Furthermore, the various nationalities of the speakers encouraged a broader Pan-Arctic perspective. All the panelists referred to the importance of international cooperation not only on the state but also on the local and even individual level, which needed to be sustained and preserved from the spillovers of external conflicts. Many problems that the Arctic communities face, such as environmental pollution, can only be addressed in joint efforts through cross-border cooperation. Having heard from senior academics and business owners over most of the week, the panelists brought to the discussions a fresh perspective on issues that have to be addressed in the Arctic. In general, during the conference sessions, various experts referred to the importance of young professionals being heard. This session indeed provided such an opportunity. However, there was no dialogue between business and political representatives. For example, the Deputy Mayor did not participate in the panel discussion and there were no questions from the audience post-panel discussion. Perhaps the importance of hearing the voice of youth leaders in the Arctic has yet to be realized.

The Petroleum Industry – Perspectives and Opportunities for Northern Norway

Contributing authors: Magnus Bakken, Dmitrii Belolapotkov, Galina Borovikova, Dmitrii Kibarov, Anastasiia Kuzmenkova, Iulia Meteleva, Ievgeniia Reva, and Gyueun Moon. **Lead author:** Gregory Sharp

Inger Hoff, a special advisor with KonKraft, made the presentation. KonKraft is a joint project, bringing together a variety of different interests, including the Norwegian Oil and Gas Association, the Federation of Norwegian Industries, the Norwegian Shipowners' Association and the Norwegian Confederation of Trade Unions (LO), and includes members from Fellesforbundet and Industri Energi. The goal of KonKraft is to promote the Norwegian continental shelf as an attractive area for investment and to enhance competitiveness by being an agenda setter. The presentation focused on a fact-based report produced in 2016, entitled "The North and the Norwegian Shelf – Introduction, Summary, and Recommendations", that dove into the opportunities and challenges of operating in the region. The full report can be found [here](#).

While the report goes into detail on a bevy of different issues ranging from climate change to factors affecting profitability, the presentation highlighted several key elements that lay at the heart of a specific vision of future development in the High North. These points were set against a historical backdrop that emphasized the importance of political developments—such as the 2010 boundary treaty between Norway and Russia—in the region, and the understanding that the petroleum industry is the foundation of Norway's wealth. It

was explained that the report was predicated on some basic assumptions, including that there would be increased economic activity in the High North, that this would be enabled by climatic and socio-economic conditions, and finally that this was a desirable path forward. The first key point presented was that *the High North is interconnected with the rest of the world*. It is not possible to operate in the North without taking into account the effects of climate change, to name but one example. Not only is climate change going to affect the way we are able to operate in the North due to changing climatic conditions, but also the regulations that accompany international treaties—such as the recent landmark agreement reached in Paris—will have an important impact on how development proceeds. Will bunker fuel be banned, or will a tax be introduced on black carbon? These questions will inform the future landscapes of the Arctic. Other larger trends that will have similarly important impacts include moves to new forms of energy, technological changes, and cooperation in the Arctic. The second point, building directly on the first, emphasized that *trends on the Norwegian continental shelf need to be carefully considered*. These include the prominence of gas vis-à-vis oil, increasing automation, technological innovation, and the knock-on impacts for other industries. As with the first point, the importance of taking a long-term perspective was underlined given the complexities of operating in the region.

One such trend that was analyzed during the presentation is the *balance of oil and gas production* on the Norwegian continental shelf. More specifically, that oil and gas production peaked in 2004, with oil output having fallen by over 50% since 2001. In the future, failure to maintain output will mean decreases in value creation, which, in turn, will influence the overall health of the Norwegian economy given the importance of the sector (especially when contractors and knock-on benefits are accounted for). The presentation was clear, however, that this decline in output and value creation was not a likely scenario. Instead, Inger Hoff emphasized that *the key to new activities is access to new acreage*. Currently, there are only four centers in operation—including the well-known Snøhvit and Goliat fields—and only half of the possible acreage is open for licensing. Going forward, the potential for increased hydrocarbon activity in the Norwegian Arctic is significant and, according to the report, critical for Norwegian industries to remain competitive. Furthermore, the opening of more acreage in the High North will produce many important *spin-off benefits*. These would be predominantly felt in the fields that directly service and interact with the oil industry, as they have the largest established presence in the region to date. Of note, although North Norwegian suppliers have proved their competitiveness, they still face a development gap when bidding against larger national and international firms.

This is partly tied up in one of the fundamental preconditions for operating in such challenging climes: the necessity of having competent personnel available. Qualified personnel have thus far been concentrated in the southwest and around Trondheim. The most recent report does note that, in response to this problem, there has been great progress made as a result of *cooperation between the petroleum industry and the technical colleges* in Northern Norway. This is because the education offered at Norwegian high schools in the North is particularly well suited to the petroleum sector. At all levels, cooperation with Statoil has added a lot of value to technical programs. In this way, further development in the North is projected to sustain this expertise boom. There are other important spin-off benefits, including increased infrastructure, trade, and air traffic in the region. These benefits go beyond just the oil industry, as they are also *important drivers for the tourism and service industries* more generally. While the report only focuses on those two industries, it was also mentioned that important interfacing is being done with the fisheries and aquaculture industries as well. There was also a *strong emphasis on safety* throughout the presentation and in the report. The high level of safety was cited as one of the strongest aspects of Norwegian competitiveness, and an important aspect of the industry more generally. This focus on safety comes across in the high standards regulating the industry, the drive to improve continuously upon best practices, and an appreciation of the role of safety in driving growth. Safety was understood in a holistic way during the presentation and encompassed everything

from oil spill preparedness and coast guard training, to coastal administration and research into the wind and wave conditions in the Barents Sea. Finally, the presentation closed with some of the *recommendations* presented in the report published by KonKraft. These suggestions focused on maintaining the attractiveness of hydrocarbon extraction in Norway and on ways to increase the competitiveness of northern industries. It also recommended maintaining a stable licensing environment, all the while expanding the acreage available in order to offset the aforementioned declining output. Underpinning everything was a focus on continuing the strong public-private cooperation responsible for the continued success of the petroleum industry in Norway.

Lesson Learned: Future Perspectives on the Blue Potential

Contributing authors: Ilya Stepanov, Denis Tyupyshev, and Mariia Golovhenko. **Lead authors:** Irina Roddvik and Zhaklin Yaneva.

The concluding session of the 2016 *High North Dialogue* aimed at highlighting and summarizing the main ideas previously discussed during the two-day conference.

In his speech, *Laurence Smith*, Professor at the University of California, centered on the physical changes that the High North is experiencing and, mainly, the gradual melting of the Arctic ice. Basing his intervention on the insightful video, “Arctic Sea Ice Age and Extent from 1978 to 2015” (<https://www.youtube.com/watch?v=NhBVGMiCFFg>), the speaker stressed that the Arctic is more environmentally sensitive than any other area in the world and pointed out four key aspects that will eventually affect the future perspectives of the region. First, he reminded us that the Arctic Ocean is not blue, at least not in the conventional meaning, as *sea ice cover is highly seasonal* and, therefore, in the winter months the ice will always return. Secondly, he implied that if the ice continues to retreat at the same speed and levels as now, we are heading to a *world where there might be no multiyear ice at all*. This statement is especially valid for the Russian part of the region, as current monitoring shows that the ice is retreating at the US-Canadian borders. From a practical point of view, the disappearance of the multiyear ice will also suppose serious logistic problems, most notably for the shipping industries. Thirdly, Professor Smith insisted that *the retreat is happening fast from an ecological and geological point of view, but, at the same time, it is affecting business slowly*. Thus, there is a need for a long-term view of the phenomenon. Finally, he emphasized the fact that the Arctic Ocean is both an indigenous homeland and the smallest ocean on Earth, encircled by the landmasses of eight states with peaceful borders and a long history of cooperation. Hence, *cooperation is a vital element for the future of the region but also its legacy and a tradition that must be preserved*. Overall, the speaker stressed that the biggest benefit of the conference was the gathering of a core group of people, many of whom young students, that really understand the needs and specifics of the region and are willing to discuss and look into the future of the High North.

On the other hand, in his discourse, *Pan Xingming*, Professor at the East China Normal University, insisted on a more balanced framework for future Arctic development. He outlined three main areas where such balance is of vital importance in terms of regional sustainable development. First of all, there is the need to *strengthen the cooperation between Arctic and non-Arctic states, and this should be promoted as a key element in the Arctic agenda*. The High North, like other regions in the world, is becoming increasingly globalized and interdependent. Therefore, countries can no longer exist and develop by themselves. China is one of the best examples in this sense as, in the 1980s, it opened up to the world and started establishing new institutions and launching liberalization reforms in order to boost its development: activities that brought not only economic growth but also improving living conditions (for example, growing GDP per capita). At the same time, China is clearly stating that it wants to be part of the global processes and is ready to cooperate with other actors. His second suggestion was that *balance between economic development and environmental*

preservation should be pursued. In this regard, Pan Xingming reminded us that China is currently paying a high price for environmental pollution (for example, there is no blue sky in the major Chinese cities), due to its inability to reduce the environmental impact as development remains a high priority. Last, but not least, the speaker highlighted *the need for joint efforts by the different generations of academia* and more inclusion of young scholars, such as Master or Ph.D. students specializing in Arctic studies.

In accordance with the previous speakers, *Anatoly Zolotukhin*, Professor at Gubkin Russian State University and the University of Stavanger, Focused attention on the fragile Arctic ecosystem and called for more coordinated activities in the fields of science and technology. The *need for Arctic standards and fostering international cooperation in the region* were the key words in his presentation. He insisted on the interdependence of the international events, alluding to the fact that any regional development—better or worse—will influence the environmental conditions and quality of living elsewhere, hence, the need to set high Arctic standards in order to explore the resources without nature striking back at us. Nevertheless, these resources should be used wisely and, in this regard, much can be learned from the indigenous communities, who live close to and from nature. In this regard, Professor Zolotukhin reminded us that an important part of future Arctic development will involve a *change of attitude that will follow the collaboration between people and nature*. It is important, therefore, to ensure cooperation not only between people or other relevant stakeholders but also between people and the environment because *nature is a part of us and we are all dependent on it*.

June Borge Doornich, Postdoctoral Researcher at Nord University, referred to three main concerns over the High North's present and future governance and management related mainly to climate change, new business opportunities in the fields of shipping, mining and/or resource exploitation. She named these concerns as *High North Paradox*, *High North Philosophy*, and *High North Paradigm*. The effects of climate change in the Arctic define the High North Paradox. The ongoing transformation of the region supposes environmental concerns and increasing calls for the preservation of nature and traditional indigenous lifestyle, at the same time as new economic opportunities are arising. The High North Philosophy, on the other hand, is connected to new ideas on how to understand the Arctic, related to sustainable development by initiating innovative green and blue environmentally friendly economies. Finally, the High North Paradigm is related to the internationalization and globalization processes as we move from the "race for the Arctic's resources" to a process of "global cooperation" in order to achieve the blue future of the Arctic.



Frode Mellemvik concluded the conference by inviting everyone to the High North Dialogue 2017 - Innovations in the Arctic